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Simplicity & Protection
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L-S Meter Connection and Shelves

The new No. 45-A meter connection, as shown above, differs from our regular No. 45 meter connection in that the arm on the outlet member has a concave surface instead of flat to receive the new half round tie-in-bar. The arm on the inlet end still remains the same as in our regular tie-in-bar connection. This new feature allows adjustment to any practical variation in the alignment of meter screws and also adds greatly to the strength of the tie-in-bar connection.

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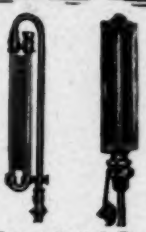
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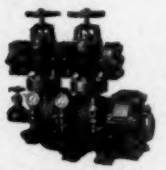
American H₂O Grease Extracting Feed Water Filter

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AMERICAN
GAS JOURNAL

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Speeding up Work in the Service Department

How the Shreveport Office of the Southwestern Gas & Electric Company Handles Gas Meter Orders ithout Lost Motion

Ruel McDaniel

A LONG, lanky individual approached the information desk that stood in the lobby of a public service company office in a large southern city. "I wanna see 'bout my gas meter," he told the young woman who presided at the desk with the somewhat misleading sign upon it.

"See the man at the counter to your right," Miss Information told him.

The Man-to-his-right sent him to Mr. Cotton, on the other side of the lobby. Mr. Cotton was not in at the moment, the customer was told.

"For the love o' Mike," he drolled, "what d'ye think I am, a sight-seer? Having me runnin' all over this building just to tell you folks I wanna meter read. Good thing you have no competitors here, or you'd get no business from me!"

This, of course, is an isolated case, but there are many public service organizations that cause too much "sight-seeing" over their buildings before the customer gets the information he desires.

A System of Records

Realizing this, the Southwestern Gas & Electric Company of Shreveport, Louisiana, set about a system of records and arrangements that would eliminate such delays and misguidances. The New Business department, under the management of R. E. Naylor, has devised a system that should be of value to other gas companies which are encountering difficulties in expediting new orders and disseminating information. The forms are especially helpful in handling orders for new meters.

The Application Blank

The first unit of the system is the application blank, especially prepared for the company. This contains spaces for the name of the applicant, address at which the meter is to be placed, amount of deposit, class of account and other needed data, all on the upper section. On the lower half of the card are lines for the signature of the applicant. There are four lines in the signature section, corresponding with four lines in the upper half of the card, making it possible to use the card for as many as three different orders concerning the same customer. Each time the customer orders a change he signs the card. The card then goes to the stenographer in the new business department, who copies the data with typewriter on to the meter order forms, which are made to be used in sections of four each.

The plan of using this application card and transferring the data directly to the meter order blanks on a machine eliminates not only loss of time, but many errors that occurred when the company used the old system of writing the orders in a book and then copying them on to a meter card, which was used in turn for dispatching orders for the installation of the meter.

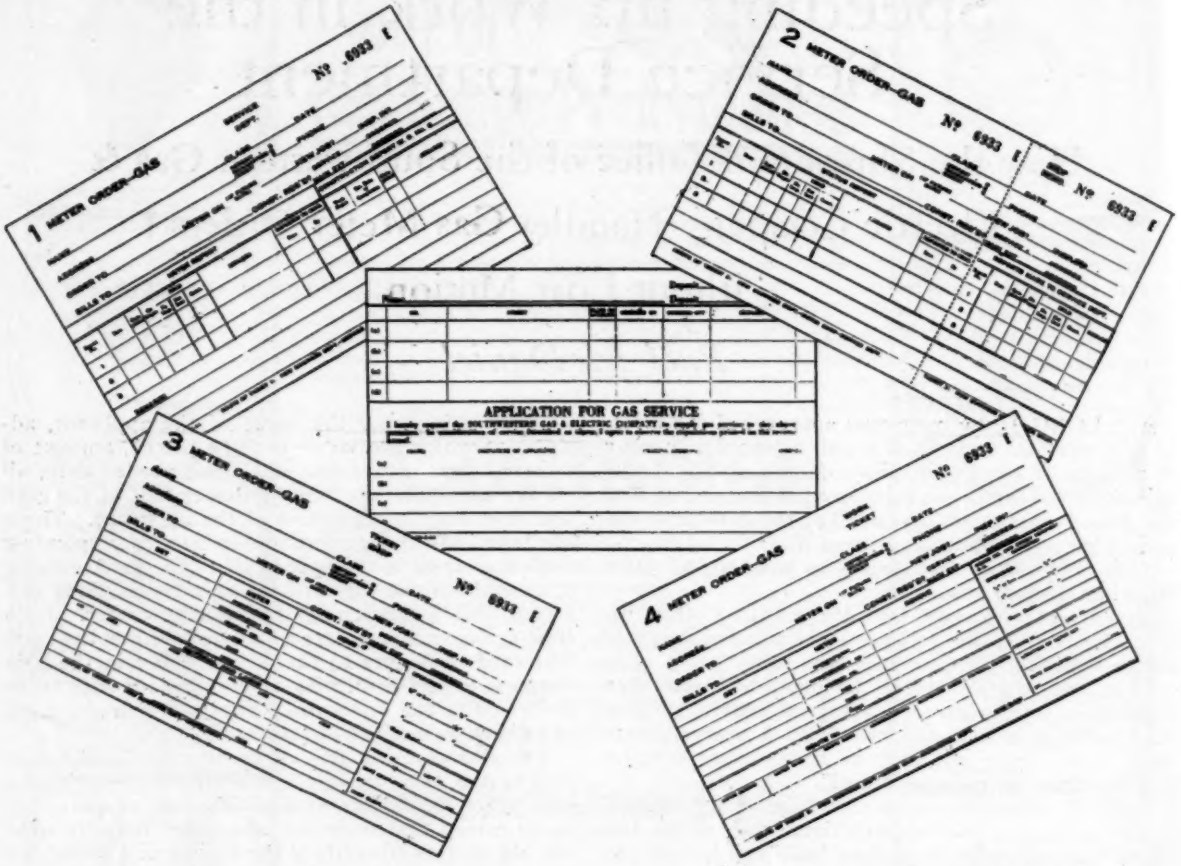
Although a description of the meter order system may sound as though the plan is somewhat complicated, it is simple, easily kept and almost error-proof.

The Order System

Each order requires four sheets of paper, all glued together at the top and bearing the same number. The upper section of each also contains the same information: that is, the name of applicant, his address, to whom the bills are to be sent, class, when the meter is to be turned on, and other data concerning the job. All four forms are filled in from the application blank at one writing by the use of car-

bon paper, so far as the upper section goes. Then the four tickets are sent to the various departments that require the information.

No. 1 goes to the service department pending file. Here it is used to record the progress on the job and blanks in the lower section provide space for this data, both for meter report and for construction information. Upon completion of the job this ticket goes to the accounting department, where the charges are recorded.



No. 2 goes from the new business department to the meter shop, as does No. 3. The lower section of No. 2 is reserved for the status report on the job, both for meters and construction. No. 2 is perforated two-thirds of the distance from left to right, making ticket 3. This bears the same serial number as the four pages of the meter order and is used as a shop memorandum. The remainder of page two, which is likewise ticket number two, goes from the meter shop to the service department, reporting the status of the order, where it is clipped to No. 1 and filed in the pending file. Ticket 3 remains in the meter shop for use in posting records there.

No. 3 and No. 4—that is, tickets 4 and 5—go to the meter shop. No. 3 is used by the meter setters, and the data which they compile in their report on this card is transferred to No. 4, and No. 4 goes from the meter shop to the accounting department.

The Setter's Report

No. 3 contains blanks, in the lower section, under the headings of "set," "meter" and "remove," for the setters' reports, together with spaces for writing in the manufacturer's name, his number, company number, size and kind of meter. Directly under this section of the sheet is another heading, "material and labor." This is set off into spaces from left to right for entering the number of the item, size, name of item and the time spent on the job. Over to the extreme right of these two general headings is a space about two inches wide and extending from bottom of the sheet to the upper section of the sheet, and in this space the setters note the size of openings and the number of openings of the various sizes, the sizes being printed in the space in very small type. Directly under this section are spaces for noting the date the job is completed and the signature of the person setting the meter. The shop clerk then signs the report under this.

Meter Record Sheet

No. 4 (ticket 5) is printed in a form much similar to No. 3, except that there is a space about an inch

(Continued on page 624)

Activated Carbon for Recovering Benzene from Gas*

How it compares with the wash oil process

M. Steding

(One of the most interesting developments within recent years in the recovery of vapors and gases is the absorption of the same by activated charcoal or carbon. This is a form of carbon which is made by heating ordinary carbon under special conditions, whereat the absorptive powers of same are greatly increased and the product is rendered available for use to remove gases and vapors from air, etc., as well as to the recovery of solvents. It is natural that one of the fields opened to the use of this substance should be the gas field, and one of the important purposes for which activated charcoal can be used therein is in the recovery and removal of benzol from coal gas. The new process must of course compete with the old wash oil process; it must give more economical and more efficient results in order to be able to supplant it. The following article tells of the various advantages and disadvantages of the two processes and shows how they compare with one another in actual results. Trans.)

IN THE year 1914 there were about 450 gas works in Germany that were recovering benzol and other products from coal gas. During the war this number was increased on account of the great demand for substitutes for benzine and other petroleum products. After the war the demand did not decrease, due in part to the necessity of supplying the Allies with benzol to the amount of 30,000 tons yearly in reparation payment. The result has been that the Germans have been unusually active in promoting all sorts of processes and trying out different methods which might result in an increase of the production of benzol.

Benzol Recovery by Wash Oil Process

The removal of the benzol hydrocarbons from coal gas by the washing process depends on the same principle as the removal of the ammonia from the gas. In the case of benzol, however, tar oil or wash oil, as it is called, is mployed in place of water as an absorption medium. The tar oil used has a boiling point between 200 and 300 degrees, between which temperature limits up to 90 per cent of the oil distills over. Wash oil is the first fraction in the distillation of tar and contains the distillate that comes over between the approximate temperatures of 180 and 200 degrees C. Wash oil has the power of removing benzene and its homologues from coal gas. Then the absorbed vapors, benzene and other hydrocarbons, are readily removed from the wash oil by heating and distillation.

The installations which are erected for the purpose of recovering benzol from coal gas are composed of quite a few units of apparatus of various sorts and large size, such as pumps, piping systems, boilers, etc. All this equipment requires considerable attention and constant repair to keep it in proper operating condition. That there are grave disadvantages attached to the operation of a benzene recovery plant, wherein wash oil is employed, is so generally recognized that there is no need of going into their discussion at this place.

Recovery of Benzol by Activated Charcoal

Within the last year or so the recovery of benzol from coal gas by means of activated charcoal has been receiving considerable attention. This process was patented by F. Bayer & Co., the well-known dye house, in German Patent No. 310,092.

The apparatus which is employed in the Bayer

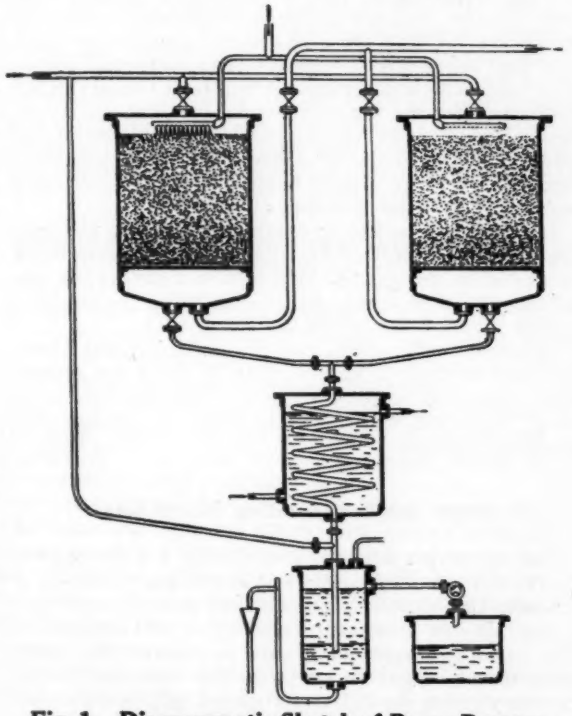


Fig. 1. Diagrammatic Sketch of Bayer Process

process is seen in diagrammatic form in the accompanying figure (Fig. 1). It consists of one or more carbon filters, a cooler which is employed for condensing and cooling the product, a condenser and the

*Das Gas und Wasserfach, 31, page 457-9.

tanks for collecting the distilled benzene, besides pumps, distilling apparatus, heat-interchange apparatus and the various piping connecting the different parts of the installation. The method of operating the system consists in absorbing the benzene in the activated charcoal and then driving it out of the same by evaporation. It is not necessary to cool the activated charcoal after the benzene has been evaporated, for even the hot carbon possesses the power of absorbing benzol from coal gas.

In small installations up to a capacity of 5,000 cubic meters of gas in a period of twenty-four hours, it is only necessary to employ a charcoal filter with a cross-section area of only one square meter, when it is not desired to wash the benzol completely out of the gas. In this case the gas is conducted through the apparatus until the charcoal is completely saturated with it. Then the filter is shunted out of the installation and the charcoal is heated in order to remove the benzol that has been absorbed. This takes about one hour. During this time, unless another charcoal filter is provided, the coal gas passes on into the holder without being debenzolized. In small installations the evaporation of the benzene from the charcoal is not permitted to extend over a period longer than 60 minutes.

Apparatus Requires Little Care

The operation of the installation is accordingly very simple, and the apparaatus requires but very little care. While the charcoal is being evaporated, it is also being dried by means of superheated steam. The gas, which is again led through the activated charcoal after the evaporation process, cools the former. Inasmuch as the periods of evaporation in the smaller gas works lie at considerable intervals from one another, the slight heating effect of the gas holder can be used as a sort of cooler.

In order to avoid false results in metering the gas, the benzene absorption installation is erected directly at a point in the gas line just before it enters the gas holder; in other words, at a point after the gas has passed through the meter house.

In larger installations two or three charcoal filters are used in the system and two of these are generally connected in parallel, while the third filter is being subjected to heating in order to remove the absorbed benzene.

Apparatus for Treating Mixed Gas

The apparatus which is seen in Fig. 2 is for the removal of the benzol content of mixed gas produced in a works that makes 7,500 cubic meters of mixed gas a day. It has a benzene capacity of 150 kilograms. The yield averages 20 grams of benzol for every cubic meter of gas treated. In this case the benzol recovery plant must treat a mixed gas, which contains 70 per cent of coal gas and 30 per cent of water gas. Hence the total content of benzene in the mixed gas amounts to 28 grams per cubic meter of the gas. This means that 72 per cent of the total amount of benzol in the gas is recovered. The gas is led through a single recovery apparatus and this is fed with gas for a period of seven hours and then steamed out for a period of one hour. During a working day of 24 hours the apparatus is absorbing benzol for 21 hours and evaporating it for three hours.

Complete Recovery of the Benzol

In working the installations, which have been described above, the principle of operation is to recover all the benzol from the gas. But most gas works for different reasons of economy and efficiency are not interested in the complete recovery of the benzol from the coal gas, but are satisfied to recover from 70 to 90 per cent of the hydrocarbon. Thus, for example, the installation which is operated in the Leverkusen gas works recovers approximately 90 per cent of the benzene in the gas. Under these conditions it was found that the activated charcoal need not be thoroughly dry-steamed. Hence from three to four and a half kilograms of steam were required to produce one kilogram of motor benzol. When the installation is operated so as to recover all the benzol that is contained in the coal gas, then the consumption of steam was found to be from five to eight kilograms per kilogram of benzol produced.

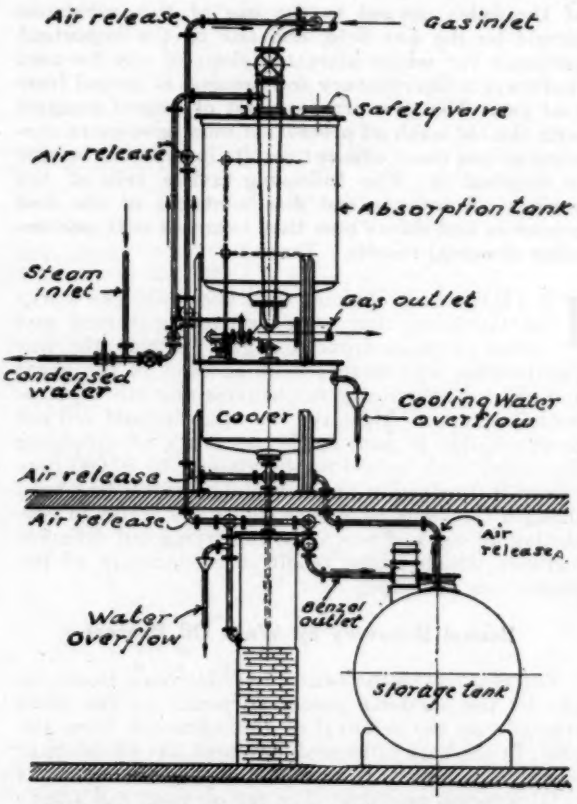


Fig. 2. Apparatus for Treating Mixed Gas

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Employees' Relations With The Company*

Jacob B. Jones

THOSE of you who have been in the newspaper game know that the first rule of every office is to "tell your story in the first paragraph."

Applying that rule in this instance, a newspaper man would say "Employees' Relations with the Company are just what the Company makes them," and he would let the rest of the story ride.

Anything else that he might say is simply incidental, for he would have told his story.

You probably remember when you bought your first radio set, that the man told you that sound waves were just like the little waves that you create when you drop a pebble in a pond of water. That is, they spread out in an even circle, gradually getting fainter and fainter, until they die out altogether.

Well, he told you the truth; that is exactly what they do, particularly if you happen to have company in for that evening.

The Radio Analogy

To my mind, the management of any company is like that pebble dropped in the still body of water. If the first wave radiates confidence, it will be followed by loyalty, and then by ability; the waves in the increasing circle will be courtesy, honesty, efficiency, and so on, and, unlike our radio sets, we can tune in on any of these wave lengths and get any of these stations loud and clear, if the principal station, confidence, is working.

Some of you employees, and many of you managers, are saying to yourselves, "that is old stuff; I have tried it myself and it won't work."

Sure, it is old stuff, and if you did not get the results it was because you were not "tuned in on the same station."

The Matter of Confidence

Confidence, as I see it, can only be gained and held when both the employee and the management are in perfect accord.

The employee who knows that he is not going to be "called down" because he has had some unfortunate accident is hardly the type of person who will commit some petty dereliction, just because the boss is not looking.

I do not mean that there should be a lack of responsibility on the part of either the employee or the management, but I do mean that it is a great waste of time to hunt for little things, and when you hunt for little things you are losing sight of the bigger things.

*Presented at Eastern States Gas Conference, Philadelphia, Pa., April 9-10, 1924.

Loyalty and Ability

Loyalty and ability are closely associated with confidence, if both the employee and the company have confidence in each other, loyalty just naturally follows; and ability finds itself unable to associate with confidence and loyalty unless it is real ability. Our old friends, pull and bluff, are not doing very effective work these days.

Personally I believe that this confidence and loyalty prevails in most gas company organizations today—possibly some of us may not have realized to just how full an extent—but I may remind you that our business is growing every year and that there is less labor turnover in the gas industry than in any other business in the country today.

Surely this indicates a feeling of understanding and good will between the employees and the company.

Just how do "Employees' Relations with the Company "affect our relations with the public, for, after all, that is where our producing revenue comes from.

You know how they affect us; just let something go wrong in the organization and every fraternal and social body in the town has it, and don't forget the Wednesday afternoon bridge club and the Friday afternoon sewing circle; they can either help you or chuck an awful lot of sand in the gears.

Gadsden on Public Relations and Gas Company Employees

At the fifth annual convention of the A. G. A., held in Atlantic City last October, Mr. Philip H. Gadsden presented a paper, "Public Relations, Their Improvement Through Company Personnel."

And that is of Mr. Gadsden sitting at his desk, writing the paper, he can look down Broad street, Philadelphia, but what he sees is Broad street in Charleston, South Carolina.

He was talking to folks just the same as you and I, the folks that he came in personal contact with; it did not matter whether they worked down at the plant or were opening a new line on King or Market street. It was just a part of the day's work, that you and I have, wherever we may be—that of meeting folks.

Relations between employees and the company only inspire confidence and loyalty, when both parties—act natural.

A True Story

In closing, permit me to tell a little true story that recently happened in our office, where one of the boys displayed not only all of the qualities I have

(Continued on page 623)

GAS MERCHANDISING

Domestic – Industrial

A Successful Water Heater Campaign

How pressure advertising and right copy produced results

John T. Bartlett

IT HAS never before been so easy to put over a successful local advertising and sales campaign on a gas appliance, for the fundamental and simple reason that never before have local companies and manufacturers known so much concerning how to do it skilfully.

There are a lot of essential points tied up in those two words, "How to." How much space to use for individual advertisements. How often to insert them. How long to conduct the campaign. How to write copy which will "get to" newspaper readers.

Though a different type of campaign, necessarily, from the national campaign, the local campaign requires fully as much skill. Its test is as relentless as daylight, actual sales. Whether the campaign is a success or a failure is known immediately, without possibility of argument.

An example of a successful gas appliance local campaign is furnished by recent experience of the Denver Gas & Electric Light Company. The manufacturers and the public utility co-operated. The appliance was a gas water heater.

This campaign ran for seven weeks.

Use of Special Terms

The Denver Gas & Electric Light Company has had long and intensive experience in special merchandising campaigns. A campaign of one sort or another, sometimes several of them, is in progress all the time. One of the principles the company has established in its experience, and to which it adheres consistently, is the desirability, if not necessity, of special terms. Easy terms, or a bargain price, often both, are determined on as a basis for the campaign. The company, nevertheless, is conservative in its use of such easy terms and bargain material.

It does not use comparative prices, but it freely uses such expressions as "special reduced price," "special easy terms," etc.

The special sale principle was used in the gas water heater campaign. The price of the gas water heater was fixed at $26.95 for the sale, on terms of a $2.95 down payment and monthly payments, with the buyer's gas bill, of $2 a month. As an additional inducement, the company was to take in old gas water heaters, making a liberal allowance. There would be no charge for installation.

Now the gas company had a sound basis for its campaign, a basis which in many merchandising campaigns to the Denver public the company had proven to be sound. The next problem was to translate this basis into terms of advertising.

The Advertising

On one side, in all gas appliance merchandising campaigns, the advertiser starts with something of definite utility to the public. In various ways it is conducive to the comfort and the efficiency of the household. If it did not cost real money it would be easy indeed to give it away. Every gas consumer would want it. The advertising problem consists essentially in the proper balance between the appeal-in-use of the article, and matter planned to reduce to lowest terms the cost obstacle.

A local campaign certainly would be a mistake which told nothing but the value-in-use of the appliance advertised. Many merchandising departments of gas companies realize this from experience. On the other hand, copy which goes to the other extreme, taking it for granted that the reader is sold on the article, and accordingly talking nothing but price and terms, is equally inefficiently planned. How the Denver campaign on a gas water heater combined the two sides of the appeal this brief resume of individual advertisements will show.

The Creative Headline

Nearly every advertisement began with a "creative" headline and a creative paragraph or two, some reason why the reader should want to have a gas water heater for the home. Later, further down the page, proper typography was made to impress on the eye the easy terms, and the low down payment—$2.95. With keen understanding of consumer psychology, the small down payment, rather than the total cost of the heater—even though the latter was a bargain—was emphasized.

(Continued on page 618)

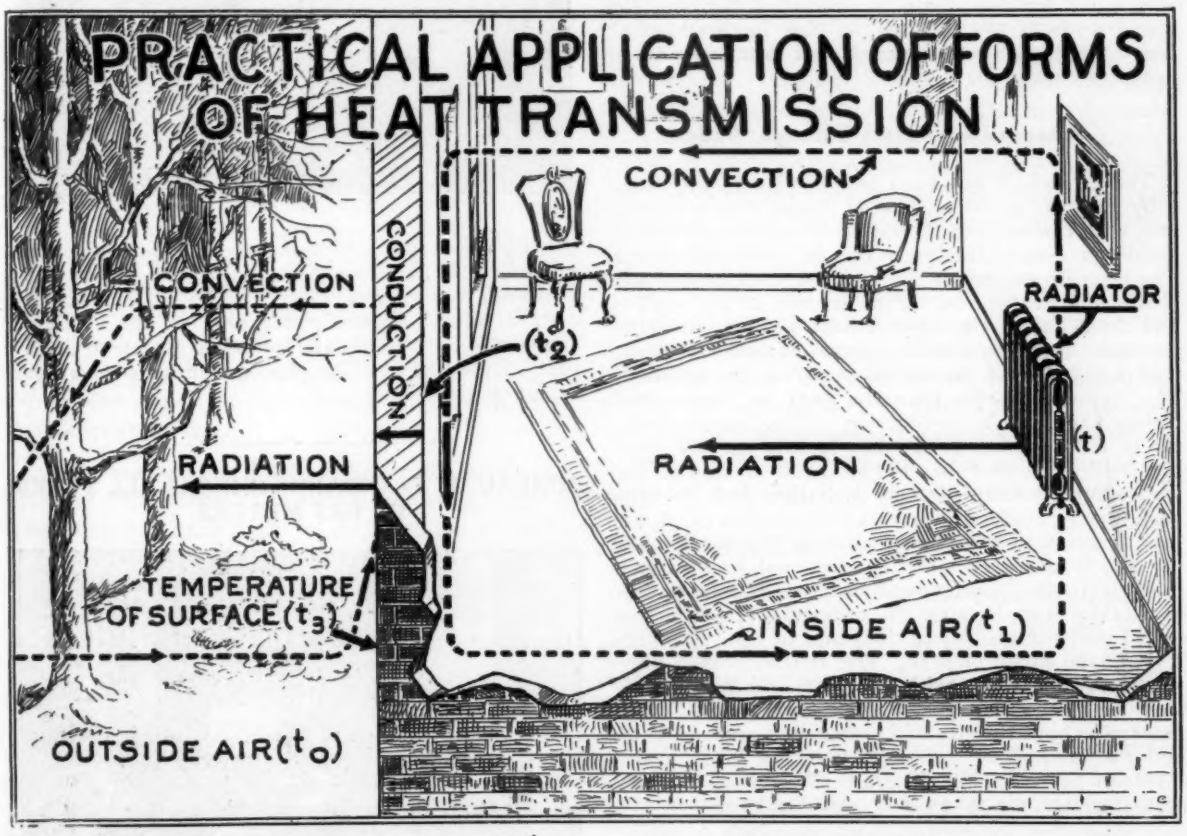
INDUSTRIAL GAS LESSONS

IF IT'S DONE WITH HEAT — YOU CAN DO IT BETTER WITH GAS

Lesson No. 27

Application of heat transmission principles

THERE are, of course, a great many ways in which the principles of heat transmission can be applied in practical work and there are all sorts of cases, some simple and others complicated, with which the industrial gas engineer comes in contact in his daily work. For it must be remembered that the gas engineer is concerned not only with the generation of heat, but with its economic and efficient utilization. And this involves the transmission of heat, its movement from the place at which it is produced to the place at which it is used. Of course, under certain very special conditions, the heat is used directly at the point at which it is generated. Such cases may be found in direct-heated apparatus where the contents of the same, which have to be brought to a certain temperature, are subjected to direct contact with the products of combustion obtained by burning gaseous fuel. This is best exemplified in the open-hearth furnace, where the hot gases come in direct contact with the steel. But even there the question of transmission of heat must be considered in a certain sense.



Common Case Involves Transmission of Heat

At any rate, by far the more common case is that where the heat must be transmitted through metal by conduction, or through air by radiation and convection in order to exert its heating effect. Then,

again, when the question of losses enters into consideration, the movement of heat is also of importance.

In many ways the best example of a practical heating problem in which all three methods of heat transmission, conduction, convection and radiation, take place is in house heating by means of steam or hot water in a radiator. Gas is burned in the furnace and the heat is stored in water or steam. The steam or water rises in the heating system and finally reaches the radiator. What then takes place is shown in diagrammatic form in the accompanying figure.

The Case of the Radiator

The radiator at temperature t radiates its heat to the surrounding air. It also loses heat by convection, the air in direct contact with the surface of the hot radiator becoming lighter on being heated, rising and being replaced by colder air, thus creating a steady circulation of air. The air in the room is accordingly heated by the combined action of radiation and convection of heat. Of course, the heat in the condensing steam is conducted through the metal walls of the radiator, so that in this kind of house heating all three forms of transmission of heat are employed.

Transmission of Heat Through Walls

The air, which has been heated to a temperature t_1 by the heat of the condensed steam, comes in contact with the walls of the house as well as with walls dividing rooms of the house and the floor and ceiling. The interior surface of the wall becomes heated and if the temperature on the other side of the wall is less than that on the interior heat will be conducted through the wall. This is patently the case with the wall which forms the outside wall of the building. The figure indicates that the heat is transmitted through the wall by conduction. This connotes naturally a lot of heat, but this loss is further augmented by the fact that the external surface of the wall loses its heat both by radiation and by convection.

Convection of heat takes place in the usual manner and is increased when the external wall surface is subjected to contact with cold winds. Radiation also takes place because the temperature of the external wall surface is less than that of the surrounding air and other objects. The two combined phenomena result in a rapid loss of heat. In house heating and in the calculations that are carried out to determine both the size of furnace that must be used and the amount of fuel that must be burned, the losses of heat through the walls of the house, as described above, are taken into consideration.

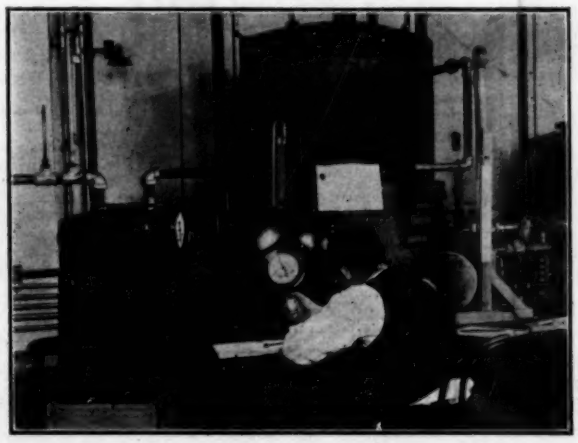
Conclusion

In conclusion it should be pointed out that it is generally impossible to consider one form of heat transmission in an industrial appliance without having to take into consideration the other forms as well. In many cases what is desired is conduction of heat through the walls or separating media to enable the heat to be carried over into the body whose temperature it is desired to increase. Convection and radiation of heat from the furnace represents loss of heat, which must be guarded against by proper insulation of the walls and other parts of the furnace.

PORTABLE WELDING EQUIPMENT USED IN SHOPS OF PACIFIC GAS & ELECTRIC CO. CARRIES A SMALL FIRE EXTINGUISHER

A small fire extinguisher is carried on the frame of the portable welding equipment maintained by the Pacific Gas & Electric Company in the shops for repairing the motor equipment used in the gas department of the San Francisco division. The welding tanks are mounted on a heavy wooden frame carried on four metal wheels, which enables the welding equipment to be easily and quickly transferred to any part of the shops. The photograph also shows the auxiliary apparatus.

BUREAU OF STANDARDS CHECKS ALL TYPES OF GAS METERS



As The Journal Views It

THE ATLANTIC CITY CONVENTION

Scarcely more than three months distanct there now looms upon the horizon the coming annual convention of the American Gas Association, the sixth since its inception. For some months past the American Gas Association has been laying its plans, using every facility at its disposal in preliminary preparation to make this convention the best ever held by the gas industry and its associated industries.

As has often been said, a convention has a peculiar significance and inherent importance to the industry which it represents, not only to the companies comprising that industry, but to the individuals who form the organizations does it convey a message of prime importance. It marks the point in the year's work which may be called a culmination of the efforts of all to make for progress and development in the various phases of the industry with which they may be connected.

Convention time is the time when the work that has been done during the year by individuals and by companies may be brought to the attention of all, so every member of the industry may benefit by what has been done. It is the time when gas men get together from all parts of the country, meet each other, renew friendships and make new ones and talk over what has happened during the year, discuss their various activities and the results that they have obtained, and in general derive from and give mutually to each other the benefits that are obtained by those who meet on common ground. It is a time when the gas man has a splendid opportunity to gain ideas and enthusiasm for his work from contact with other gas men and from knowledge of what they have accomplished. The achievements of others are an incentive to the ambitious man to work for like results.

It must be borne in mind by those who attend the convention that the advantages to be gained are both material and spiritual. There is much to be learned from the work of others. The manufacturers will have new apparatus and new developments to exhibit. Gas men will deliver important addresses and reports on subjects interesting to all. There will be no end of valuable information disseminated and obtainable for the mere asking. But there will also be a renaissance of good fellowship, the re-engendering of the feeling of common interest, of friendship and of altruistic effort on the part of each man to see that the other has a good time, which form the real backbone of any convention, and particularly of the gas convention.

All gas men who are able to do so are urged to attend and urged to exert every effort to make the coming convention a memorable one in the history of the American Gas Association. If each one does a little, the sum total of all efforts will be tremendous, and the sixth annual convention will go down as one of the best ever held. It is not too early to start, by any means; in fact, the time is drawing very close, and if anything worth while is to be done a beginning should be made now.

The American Gas Journal has made its plans for this coming convention, concerning which we shall speak more in detail later. It intends to do its bit towards maaking the convention a success, and a greater success than ever before.

It is again up to the gas men to put the convention across, to make it what it deserves to be, the representative gathering of the gas fraternity of the country, a gathering distinct from all others by its comprehensive character, the real honest-to-goodness effort that has been put into it to make it notable. Atlantic City is a City of Conventions; there are many held there during each year. Let us make this annual convention of the American Gas Association one that will outshine all others. It can be done, and it is up to the gas men themselves to do it.

A SUCCESSFUL WATER HEATER CAMPAIGN

(Continued from page 614)

The Space Occupied

Advertisements occupied fairly large space. Three columns by about seven inches was one size. Some messages occupied four columns by 13 or 14 inches. These spaces were big enough to smash through on nearly any newspaper page to the reader's attention. The headlines of the advertisements were as follows:

"Hot Water Always on Tap."

"Here's a Chance to Secure a Gas Water Heater on Attractive Terms."

"Don't Scrap Your Old Gas Water Heater."

"Hot Water for House Cleaning."

"Hot Water in Constant Readiness—For Baby's Bath—For Breakfast Dishes—For Monday Wash—For Weekly Cleaning."

It will be noted that three of these quoted titles begin with qualities of the product in use, two with the special terms. Denver has four daily newspapers, one morning and three afternoon, and all were used for the campaign. Commonly, a given advertisement did not appear in all on the same day, but in one, then on each succeeding day in another. To the extent that circulation was duplicated, this practice undoubtedly increased the total number who read individual advertisements and it also made possible the benefits of repetition.

Right Copy, Not Fancy Copy, Counts

Copy was neither "fancy" nor spectacular. I believe successful local advertising campaigns in the gas field quite generally go to prove that not clever or fancy copy, but "right" copy, is what fits. By "right" copy, I mean copy, placed in space of proper size, set up well to get facts before the reader, which states clearly the sales argument of most weight. The following is typical copy:

"HOT WATER ALWAYS ON TAP."

"For the bath, the laundry, the kitchen, hot water is indispensable. You can have it always on tap if you have a gas water heater.

"We have a special Sale on the Water Heater, which puts it within easy reach of every housewife.

"$2.95.

"Puts a Water Heater in your home Ready For Use, the balance payable in easy payments of $2.00 per month with your gas bill. Special price during sale, $26.95.

"We'll make a liberal allowance for your old gas water heater.

"Phone Main 4000. The Denver Gas & Electric Light Co."

The Use of Broadsides

In connection with the advertising campaign, two broadsides supplied by the manufacturers were mailed out. In each mailing, approximately 4,800 prospects were reached. The names were compiled by the company sales representatives.

The broadsides used a second color, red. Played up on the address side, as judged to be the most powerful single statement, was the $2.95 down payment. One cover message, in large type, was "$2.95 Buys a ———." The number and make were in red ink. The second broadside cover message was, "Don't Let $2.95 Keep You from Owning a ———." The words "Don't Let," and the down payment and make, were in red ink.

The broadsides with the effective use of color and illustration played up the efficiency of the gas water heater. "Gives You All the Hot Water You Want," and "No Wasted Gas," were key talking points—then it talked special terms. "To get this heater value at the special terms," the reader was urged, "act now—today."

Campaign Proved Very Successful

This campaign, sketched briefly in its principal phases—it was backed up, of course, by window display and by aggressive work of company sales representatives—was very successful in Denver.

It was not what would be termed a "clever" campaign, but it was a "right" campaign, gauging well the problem to be handled, and adapting means skilfully to ends. In particular, I believe the single feature of pressure should be noted. One of the greatest wastes of the past in gas appliance advertising has been in attempts to put over a sales campaign with too little advertising pressure. Too little advertising simply accomplishes nothing tangible at all. In the sale of appliances which require more or less education of the consumer, and which call for quite a little pecuniary expenditure, plenty of weight in advertising is demanded to get results.

This Denver campaign put into advertising the weight that was required.

GAS AN HONEST, ECONOMICAL FUEL

Just whether some of the druggists who use gas for various purposes at their places of business made a complaint, or whether the Editor, who is a skilled chemist, felt that it was only meet that he tell the druggist world just how good gas is, the writer does not know, but he does know that the June edition of the Rocky Mountain Druggist carried the following laudations:

"Gas Meters Register Too Little Rather Than Over

"A gas company which tests from 15,000 to 20,000 meters per year says that the average of the meters is approximately 2 per cent slow, that is, they record 2 per cent less gas than the amount which has actually passed through them.

"An internal leak (not noticeable on the outside) in a gas meter allows the gas to slip by the measuring compartments so that, as every meter expert knows, the tendency of gas meters is to record less gas than has actually passed through the meter.

"A pound of steak could be off 2 per cent and you could hardly discover it. A six-inch glass of soda has more than ⅛-inch of foam, which is 2 per cent ot its height, and no remonstrance is made."

Catechism of Central Station Gas Engineering in the United States

Installment No. 27

(Continued from last week)

Determining Most Economical Size of Purifying Boxes

However, in order to provide for the use of oxide of iron less efficient than that used in his experiments, Mr. Crisfield gave the following rule for determining the most economical size of purifying boxes for use with oxide of iron, this rule being based upon a time of contact of sixty seconds. "$60 = \frac{3600V}{3R}$ where V is the volume of oxide" (in cubic feet) "between inlet of first box and point of testing gas and R is the rate" (of make) "per hour. By substitution of the desired rate per hour V becomes known: divide V by 2 or 3, dependent upon whether it is the intention to test on second or third box, and the result is the volume of oxide in one box which may be put into any length, breadth and depth that is convenient.

"The equation may be simplified for convenience to read $R = 20\ V$. Or the volume of oxide between the inlet to the purifiers and the point of testing for sulphuretted hydrogen should be 1/20 of the rate per hour."

Average Annual Rate of Gas Making Used

Mr. Crisfield apparently intended that the average rate of make throughout the year should be used in this formula, since it is in this way that it has been used to determine the sizes of the boxes necessary. But if this is done, when the make is at the maximum the time of contact falls below the number of seconds stated by him as the limit below which the oxide ceases to do any work. It would seem therefore as if the maximum rate of make should be used instead of the average. Assuming the boxes to be worked three on and one off, as is customary, and the oxide to be in a layer 30 in. deep in each box, as can easily be accomplished in boxes 4 ft. deep, even when a catch layer of shavings is used below the layer of oxide, the rule gives the area required in each box has 42 square feet per 100,000 cubic feet of the maximum twenty-four hours make. If the valve arrangement is such as to permit of all four boxes being worked at once, so that the gas can be tested at the outlet of the third box, the area given by this rule is only 28 square feet per 100,000 cubic feet of the maximum twenty-four hours make.

Purifying Boxes for Coal Gas

Mr. Crisfield's experiments having been made with carburetted water gas, which contains less sulphuretted hydrogen than does coal gas, the area determined by his rule is too small for coal gas work. A common practice is to make the boxes for coal gas work 33½ per cent larger than those for carburetted water gas work, an area (in square feet) equal to the maximum make (in 1,000 cu. ft. per 24 hours) multiplied by 0.3 being taken for the latter, while the area of the former is reached by the use of the factor 0.4.

In designing a new set of purifiers it is necessary to make a proper allowance for the probable increase in the amount of gas made, and to take as the maximum make to be provided for, not the make at the time, but such an one as circumstances indicate will be reached within a reasonable time. Proper allowance must also be made when it is known that the gas making materials that are to be used contain an unusually large percentage of sulphur.

Strain on Straps Holding Down Purifying Box Cover

145. How would you calculate the strain that the straps used to hold down the cover of a purifying box will be called upon to resist? Illustrate your answer by working out an example.

Ans. The total strain which the holding-down straps on a purifying box cover are called upon to resist is equal to the difference between the lifting force exerted on the cover by the pressure of the gas beneath it and the weight of the cover. The lifting force exerted by the gas, measured in pounds, will be equal to the pressure in pounds per unit of area multiplied by the area upon which the pressure acts. In the case of purifying boxes with water seals, the maximum pressure, in inches of water, that can be exerted on the cover, is equal to the depth of the seal, and this pressure should be used in calculating the lifting force of the gas. In the case of purifying boxes with covers bolted on, the maximum pressure to which the cover can be subjected will be determined by the depth of the seal on the syphons through which the condensation is taken away from the boxes, or the pipes connecting them. To convert pressure in inches of water into pressure in pounds per square foot it is necessary to multiply the former by 5.208, the weight in pounds of a volume of water with an area of one square foot and a depth of one inch.

Strain on Any Strap Dependent on Number of Factors

The strain upon any one strap will depend upon the total strain, the design of the cover and the number of straps. When the cover is flat or when it slopes up equally from all four sides, and the straps are spaced equal distances apart, each strap will bear

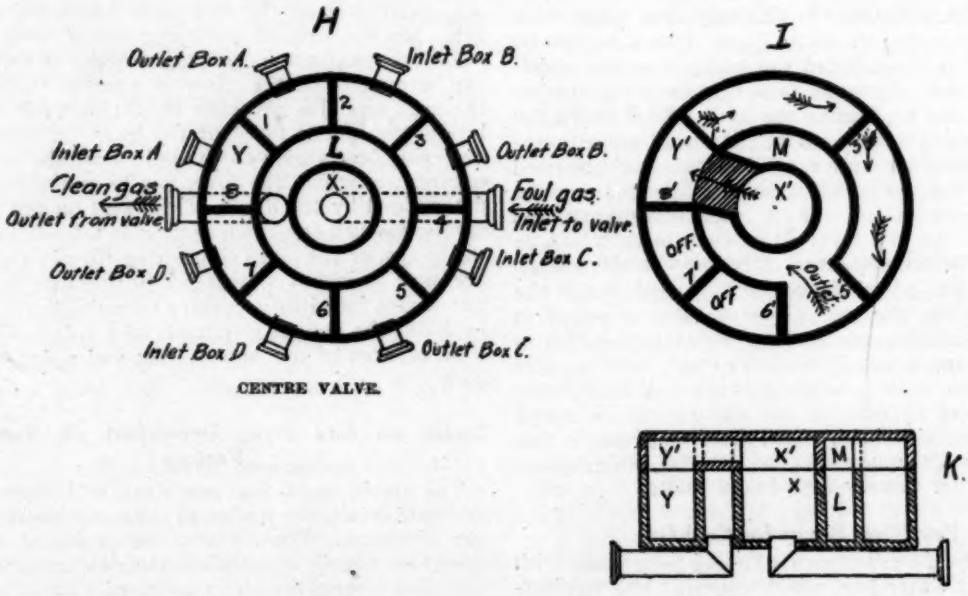
the same strain, which will be equal to the total strain divided by the number of straps. When, however, as is sometimes the case, the cover is arched in one direction only, practically all the strain is borne by the straps on the two sides from which the rise occurs, very little being transmitted to the ends, and to obtain the strain on each strap the total strain should be divided by the number of straps on these sides only.

As an example of the method of working, the case of a cover for a purifying box 10 ft. square and with a cup 24 in. deep, may be taken. The cover may be assumed as weighing 1,500 lbs., as being of such design as to throw the strain on all sides equally and as being held down by eight straps, two on each side. As purifying boxes are designated by the size inside, and the cover fits midway in the cup, which is usually about 6 in. wide, the top of the cover will be 10 ft. 6 in. square and the area on which the gas pressure will act will be 110.25 square feet. As the cover is sealed in water to a depth of 24 in., the pressure under it can never rise above that amount, and the maximum total strain on the straps will therefore be $(110.25 \times 24 \times 5.208) - 1{,}500 = (110.25 \times 125) - 1{,}500 = 12{,}281$ lbs. As there are eight straps the strain on each one will be $\frac{12{,}281}{8} = 1{,}535$ lbs.

Dry Center Valve for Four Purifying Boxes

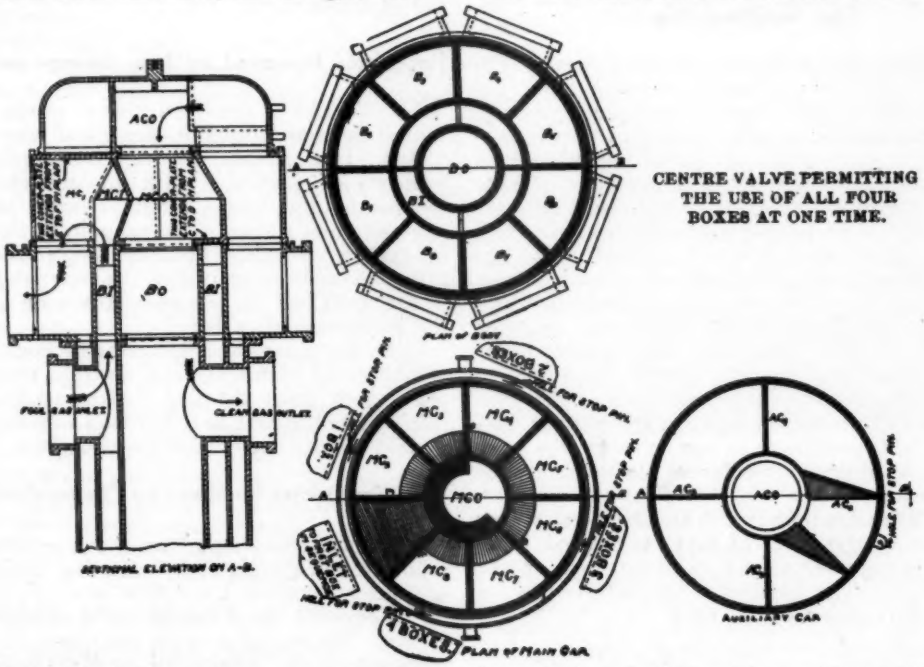
146. Give a description, illustrated with sketches, of an ordinary dry center valve for four purifying boxes built to put three in action at one time, showing the divisions of the seat and cover and describing the action of the valve. Describe also one of the forms of dry center valve which allows of the use of all four boxes at once.

Ans. The center valve is a device whereby a set of four purifying boxes may be so operated that one box is thrown out of use for cleaning, the other three being in use, and the gas passing through them in sequence. The position of the cover on the body of the valve determines which box is out of use. The cut shows the construction of the valve. H is the body of the valve, I the cover and K a vertical section through the cover and the body, showing the cover in place. The body of the valve has a solid bottom, and when the cover is removed is open at the top. The cover, which revolves on the body of the valve, has a solid top, but is open at the bottom, except for that part shown in shaded lines on the section I. The cut shows the cover as it would appear if the top plate were removed. If the cover I were placed over the body of the valve H, each in the positions as shown on the cut, the space marked in the cover Y^1 would exactly correspond with the space Y in the body of the valve. The course of the gas would then be as follows: Entering the inlet to the valve, it would come into the center space X in the body of the valve. Having no other outlet it would rise into X^1 of the cover. Its only outlet thence would be to Y^1 of the cover, thence to Y of the body of the valve, and thence through the inlet into box A. Passing through box A to its outlet, it would find its only possibility of escape to be into the space 1 of the body of the valve. The partition between Y^1 and 1^1 of the cover of the valve would be over the partition between Y and 1 of the body of the valve. The gas would, therefore, be compelled to rise from 1 of the body of the valve into space 1^1 of the cover of the valve. It could then, in the cover of the valve, pass over the partition between the spaces 1 and 2 in the body of the valve, and down into the space 2 of the body of the valve, which is connected



CENTRE VALVE.

with the inlet of box B. The partition between 1^1 and 3^1 of the cover would be over the partition between spaces 2 and 3 of the body of the valve. The gas then returning from box B, through its outlet into space 3 of the body of the valve, would find its only direction of further progress to be up into the cover of the valve into space 3_1, over the partition between spaces 3 and 4 of the body of the valve, and down into space 4 of the body of the valve, which is connected to the inlet of box C. Passing through box C and out of its outlet into space 5 of the body of the valve, it finds its only direction of further progress to be up into space 5^1 of the cover of the valve. But space 5^1 of the cover of the valve is shut off, by the position of the cover on the body of the valve, from space 6 of the body of the valve, which is connected with the inlet of box D. Therefore, the gas cannot reach the inlet of box D. But space 5^1 of the cover of the valve is open to space M of the cover of the valve, which in turn is open to space L of the body of the valve (spaces M and L are annular rings surrounding the spaces X^1 and X). The gas then would pass from space M of the cover down into space L of the body of the valve. Space L of the body of the valve is directly connected with the clean gas outlet from the valve, and the gas, therefore, would pass, having no other means of egress, through this outlet.



CENTRE VALVE PERMITTING THE USE OF ALL FOUR BOXES AT ONE TIME.

Further Description of Figure

A little study of the cut will show that if the cover were revolved on the body of the valve until space Y^1 of the cover corresponded with space 2 of the body of the valve, which is in connection with the inlet of box B, box B would first receive the gas coming from the valve, and box D would be thrown into the series—box A being shut off. In this position of the valves, spaces 6^1 and 7^1 of the cover would be over spaces Y and 1 of the body of the valve.

If the student will carefully cut out from the diagram of the cover the spaces 1^1, 3^1, 5^1, 6^1, 7^1, Y^1, X^1, and M he will have left the lines showing the walls of the different compartments of the valve, and that part of the bottom of the cover which is solid, namely, the shaded part. If he will then apply this to the cut of the body of the valve, making the circular lines of one correspond with the circular lines of the other, he will be able, by moving the diagram of the cover, to get a better idea of the way in which the valve works, and of the positions which the cover must occupy in order to put one or another of the boxes off for cleaning.

One form of center valve which is so constructed as to permit of the use of either one, two, three or four purifying boxes at a time is illustrated on the second cut accompanying this answer.

Construction of Body of Valve

The construction of the body of this valve is the same as that of the corresponding part of the ordinary center valve, except that the positions of the main inlet and outlet are reversed, the inlet being through the annular portion and the outlet through the central circular portion, but it is provided with two movable covers or caps instead of one. The main cap is free to turn on the body and the upper auxiliary cap turns on the main cap and can be placed and locked in any one of four positions. When it is so locked the two caps can be turned together as if forming only one piece. The position occupied on the main cap by the auxiliary cap determines the number of purifiers that are in use at any one time, while that of the main cap on the body determines which box shall be the first of the series in use independent of the number.

Construction of Main Cap

As will be seen by a study of the section and plan shown on the cut, the main cap is entirely open on the bottom except for a plate covering ⅜ of the annular space corresponding to the annular main inlet in the body. The remaining ⅝ of this annular space is open at the bottom so that the gas can pass up from the corresponding space in the body, but side walls are arranged, as shown, so that the only outlet from this space in the cap is through an opening in the outside wall leading into the only one of the eight outer compartments, the same in size and position as the outer compartments in the body, that is covered and not open on top. This being the only compartment open to the inlet, it must always serve as the inlet to the first purifier. It will also be seen from the plan that all of the outer compartments of this cap are shut off from the central main outlet, which is open at both top and bottom, and that the gas coming back through the outlet from the first purifier and compartment B_2 of the body into compartment MC_2 of the cap can escape only by passing up into the auxiliary cap.

The Auxiliary Cap

This auxiliary cap is divided into one central outlet and five outer compartments, all open at the bottom but closed on top. One of the outer compartments, corresponding in shape and area on the bottom with the shape and area of the top of each of the outer compartments in the main cap, is open to the outlet compartment. Three of the other outer compartments, each having bottom openings which cover the top openings of two adjacent compartments of the main cap, are completely isolated from each other and from the central compartment, being open only to the compartments of the main cap over which they lie. The fifth outer compartment never comes into use, being always over either the inlet to a purifier that is off or the covered top of the inlet compartment of the main cap when all four purifiers are in use. This auxiliary cap can be set on the main cap in any one of the four different positions marked by the four lugs shown with holes for the pin that, passing through the hole in the lug on the auxiliary cap into one or the other of them as desired, locks the two caps together so that both can turn on the body in unison. The number of purifiers in use for each position is shown on the plan.

Purpose of Auxiliary Cap

By combining the various sections and plans, it will be seen that when the auxiliary cap is set in the one-box position compartment AC_6 of the auxiliary cap will be directly over compartment MC_2 of the main cap and the gas will travel from the foul gas inlet into and through the annular compartment BI of the body, compartments MCI and MC_1 of the main cap, and compartment B_1 of the body to the purifier, then from the purifier into and through compartments B_2 of the body, compartment MC_2 of the main cap, compartment AC_6 of the auxiliary cap and the central openings ACO, MCO and BO, in the auxiliary cap, main cap and body respectively, to the main outlet.

If the auxiliary cap is set in the two-box position the travel of the gas is the same until compartment MC_2 of the main cap is reached. As the division wall between compartments AC_6 and AC_4 of the auxiliary cap will be over the division wall between compartments MC_4 and MC_3 of the main cap, the wall between compartments AC_4 and AC_2 will be over that between MC_2 and the covered inlet compartment. Therefore the gas will pass from MC_2 up to AC_4 and going over the wall between MC_2 and MC_3 will pass down through MC_3 into B_3 and thence into the second purifier. Coming back from this it will go through compartments B_4 and MC_4 into AC_6 and from there to the main outlet as before.

By the aid of templates, cut out as advised for the ordinary center valve, the members of the class can work out the course of the gas when three or four purifiers are put in action, and can also see how turning the two caps together will bring each box in succession first in the series without altering the number in action.

Impurities Removed by Iron Sponge and by Lime

147. Which of the impurities of crude gas are removed by iron sponge or mass, and which by lime?

Ans. Iron sponge, or iron mass, possesses the property of combining with sulphuretted hydrogen, but has no affinity for carbon dioxide. As oxide of iron pure and simple, it has no affinity for bisulphide of carbon or other sulphocarbon compounds, but after having been revivified, the free sulphur present in the mass has the power of arresting a portion of the bisulphide of carbon.

Lime has a strong affinity for carbon dioxide and sulphuretted hydrogen, and entirely removes these compounds from the gas. After having absorbed sulphuretted hydrogen it has also a more or less uncertain affinity for bisulphide of carbon.

Impurities Removed by Chemical Action

148. Name the impurities that are removed from crude illuminating gas by chemical action and the substances employed for their removal, and give as far as possible the chemistry of the operation.

Ans. The impurities that are removed from crude illuminating gas entirely by chemical action are, sulphuretted hydrogen, H_2S, bisulphide of carbon, CS_2, cyanogen, CN, and carbon dioxide, CO_2. Ammonia, NH_3 is removed from coal gas partly by chemical action and partly by simple solution in water, a physical action.

The substances which serve for the removal of ammonia chemically are the carbon dioxide and sulphuretted hydrogen in the gas itself and conversely the ammonia serves for the partial removal of the carbon dioxide and sulphuretted hydrogen The re-

(Twenty-eighth Installment Next Week)

EMPLOYEES' RELATIONS WITH COMPANY

(Continued from page 613)

referred to, but he had that rarest of all jewels called TACT.

Sam Roselsky comes in, and Sam is mad all over. He declares he has the largest bill he ever received. He declaims loud and strong that he did not eat the gas—he did not drink the gas—he will not pay the bill—and to hell with everybody.

I wondered just how this boy was going to handle the situation. We are not a large enough company to have a trained clerk for this purpose and in fact such situations are rare with us.

The perfectly easy thing for him to have done would have been to say: "Mr. Jones is here; I will refer you to him."

Did he do that? He did not.

He first showed Sam he was wrong three times in the previous year, for he had paid bills higher than the one in question.

Sam was not talking so much now—he was sort of running down—and here enters diplomacy.

The boy said, "Now, Sam, this is not the highest bill you have ever paid us, but if it suits you I will come over tomorrow and look around and see if we can find an answer."

Sam agrees and I should have told you that this was his first complaint in the twelve years he had been in town, and Sam had paid us a lot of money in that time.

Sam is just leaving the office. I had not said a word—simply listened. As Sam turns the door-knob to leave—Tact enters—the boy calls him back and says, "Sam, how is your daughter Fannie?"

His face just seemed to light up as he said, "She is doing fine and you ought to see that boy—they named him after me—how much is that damn gas bill—here, take the money—come over tomorrow and see the baby."

Pretty much anybody can make money—if that is all that they want to do.

But the fellow who makes friends has something that money can never buy—and I know of only one prescription, and that is—act natural.

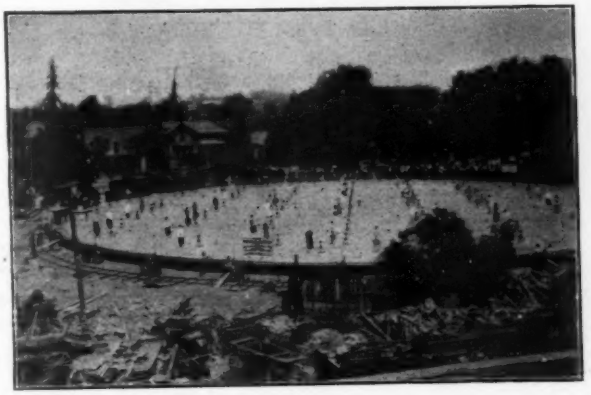
Reverting to the first paragraph—"Employees' Relations With the Company"—I still believe they are just what the company makes them.

NEW THREE MILLION FEET HOLDER FOR PACIFIC GAS COMPANY

While batteries of moving picture cameras ground out yards of film, 100 young ladies, stenographers and employees of the Pacific Gas and Electric Company, worked the jacks which lowered the 200-ton steel bottom of the giant new three million cubic foot gas container into position at Montgomery and San Augustine streets, San Jose, California. The ceremony, comparable to that attending the launching of the hull of a great trans-oceanic liner, was witnessed by hundreds of residents of the valley, by newspaper men from all parts of the county and by students of the various schools.

For thirty-three minutes the young ladies moved in unison, unscrewing the big jacks, which held the circular plate two and a half feet above the position it had to occupy before further construction work could be done. Each girl, during that half hour, handled two tons of steel.

The plate forming the bottom of the tank, which is to be six times the size of the present container, measures 17 feet in diameter. Its position above the base was necessary in order that the workmen might get beneath to drive the thousands of rivets which held the plates in position.



DEMONSTRATION STIMULATES SALES

Harold F. Podhaski

The idea of a demonstration to stimulate the sale of gas stoves and equipment is, of course, nothing exactly new, still it is always interesting to note the actual results in the way of increased sales a dealer may obtain by this method of merchandising.

A certain dealer in the Atlanta territory for a well known stove, during the first half of May, conducted an extensive merchandising campaign to boost the sale of this stove, with results in the way of increased sales that proved all any dealer could well desire.

The campaign principally included a series of lectures, every day, by a well-known French chef, and were not, strictly speaking, in the nature of a demonstration of this particular stove, but rather a detailed talk on domestic science, touching upon such

(Continued on page 627)

SPEEDING UP WORK IN THE SERVICE DEPARTMENT

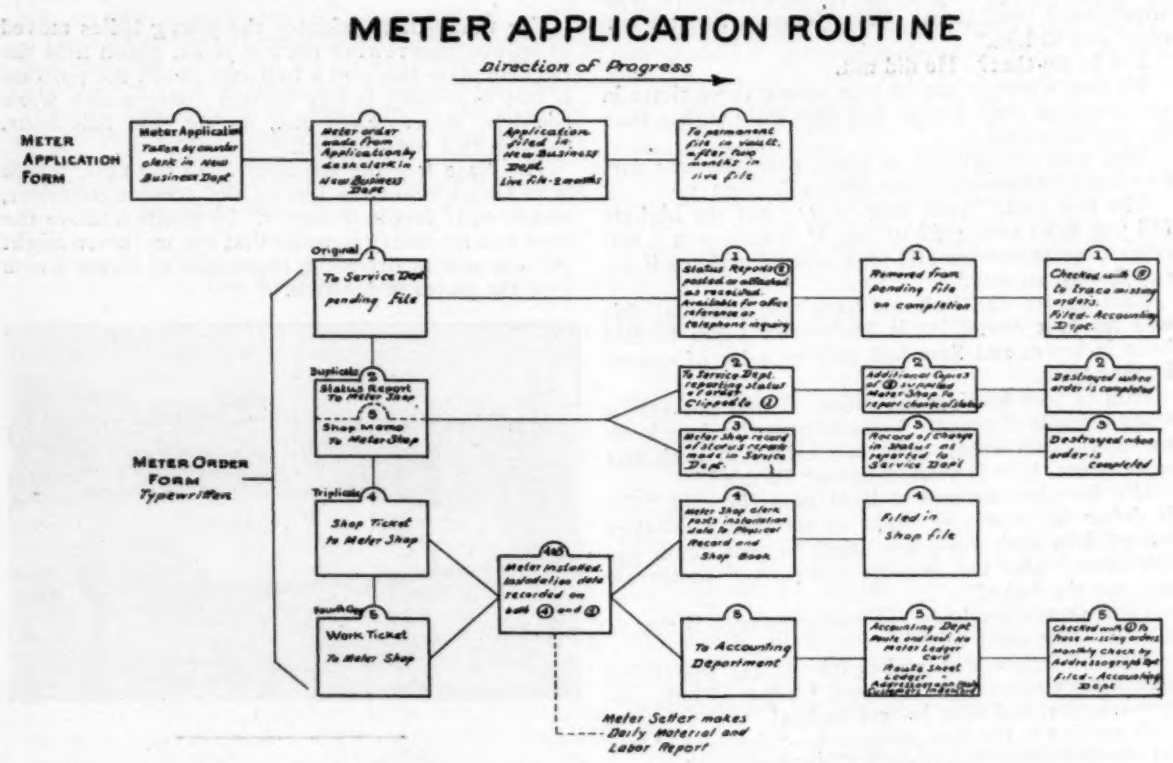
(Continued from page 610)

and a half high at the bottom of the sheet for notations of the various departments to show that they have copied the data from the reports insofar as it concerns them. The sheet goes to the meter record department, the clerk keeping the meter cards, the route bookkeeper, the addressograph operator and to the customers' index. After this the card is checked with ticket No. 1 in the service department file to guard against possible loss of card and is then permanently filed in the department's records, being attached to No. 1.

a matter of seconds for him to find the complete meter record of any customer who may call in person or by telephone. He is a regular "shock absorber" for the service department, and there is never any misguidance on the part of any employee as to whom a customer should be sent in order to learn about his meter.

System Builds Good Will

As a good will builder—a factor that the average public service organization is always searching for—this simple method of keeping records is worth more



No. 4 is of a different grade of paper than the other three sheets. It is orange color and is made of light cardboard material, while the others are of ordinary light pink paper.

The Service Department File

No. 1, the record of the order as issued, with No. 2 clipped to it and showing the status of the order as reported by the meter shop goes to a desk in the service department, where it is filed according to the customer's name. The clerk who has charge of this file has three telephones on his desk and his sole duty is to answer complaints and receive various reports from customers. The files of Nos. 1 and 2 sheets remain at his elbow at all times, and it is but

than several hundred dollars spent on good will advertising, good as advertising is. By being able to give a customer an intelligent answer regarding his meter, being in a position to give him a history of it from A to Z if necessary—he begins to regard the concern as an organization that cares enough for his business to keep up with how it is serving him, and the company begins to form within the mind of the customer a personality of its own, instead of being the stiff, cool-dealing gas company that he used to like to "cuss" so well.

The Southwestern Gas & Electric Company has about 18,000 gas and 12,000 electric meters and they have as many as 200 orders a day to care for. The company's system of keeping meter records is pliable, being just as applicable to a 5,000 meter business as to a 100,000 meter company.

ACTIVATED CARBON FOR RECOVERING BENZENE FROM GAS

(Continued from page 612)

The Quality of the Benzol

Just a word about the quality of the benzol that is recovered by this process. The product was tested in motors and was found to give very good results. The power production was found to be from 5 to 10 per cent greater than that which was secured with benzol obtained from the distillation of coal by the regular process. The metal parts of the motor were not injured by the benzene after it had been used as fuel to run the engine for a period of four months.

Activated Charcoal and Its Manufacture

Activated charcoal is made by carbonizing wood or other cellulose-containing materials in the presence of water-absorbing ingredients, such as chloride of zinc, iron chloride, calcium chloride, and the like. These ingredients are then almost completely washed out from the carbonized mass. The charcoal is made up of particles usually of the size of barley grains, but it can also be manufactured in any other degree of fineness. A liter of this charcoal weighs about 250 grams.

Improved Quality of Charcoal

The Bayer Company has recently improved the quality of the activated charcoal. The stability of the new product is much superior to that of the old. The new product goes under the name of T-carbon and is much better in many respects than the old variety of activated charcoal. Another advantage of the new T-carbon is the higher absorption efficiency when calculated on a space filled with the material, compared with the earlier form of this substance. Thus one cubic meter of T-carbon will absorb from 50 to 70 kilograms of benzol, according to the proportion of bnzol that is found in the coal gas, a content that varies from 20 to 35 grams per cubic meter. Hence it follows that one cubic meter of the T-carbon can remove the benzol contained in from 1,400 to 2,000 cubic meters of coal gas. One liter of the T-carbon weighs approximately 400 grams.

Conditions Affecting the Use of the Carbon

The following conditions affect and control the operation of the activated charcoal absorption system for the elimination of the benzol contained in coal gas. In the first place the gas must be free from tar, ammonia and sulphuretted hydrogen. Gas that contains these substances will, when passing through the bed of activated charcoal, contaminate the same with impurities and precipitate sulphur which will be held by the charcoal. As this condition goes on, the activated carbon gradually loses its effectiveness until it finally becomes inactive. Under such circumstances the carbon must be ignited in order to restore its activity and absorbing powers. The fact that carbon during its use as a benzol absorbent does not lose its activity and that the loss due to dusting is inconsiderable has been proven by practical operation of activated carbon absorbing systems in the recovery of the solvents employed in the manufacture of plastics, rubber compositions, artificial leather, and for two years in the gas works at Leverkusen, Germany.

What Is Pure Gas

The next question that arises in the discussion of this matter, is what is a pure gas; in other words, what must the degree of purity be in the coal gas before it can safely be passed through the activated charcoal absorbing system? Is it necessary to subject the coal gas after manufacture to special purifying processes? The answer to this question is that the coal gas can be and is purified in exactly the same manner as heretofore. It is ordinary practice to remove the tar and ammonia in a very thorough manner before sending the coal gas through the purifying boxes, containing iron oxide, in order to eliminate the sulphur and cyanogen compounds in the same. Otherwise, as is well known, the oxide is quickly contaminated and it is not long before it becomes inactive and must be replaced with fresh material.

Special Purification Unnecessary

Hence in a gas works that is operated along correct scientific principles the coal gas that is ready to pass through the activated charcoal absorbing system will contain, under normal circumstances, but little if any tar and ammonia. Hence it is in condition to go through this system if such is installed in the gas works. Of course, it is also necessary to remove all of the sulphuretted hydrogen from the coal gas before it enters the benzol recovery plant, but this is also a matter that is taken care of in a perfectly satisfactory manner in the ordinary well operated gas works. If the operation of the works is conducted along these lines and if a test is made for sulphuretted hydrogen by means of lead acetate paper, which shows the presence of sulphuretted hydrogen in the gas by blackening, then there need be no fear that the activated charcoal will be contaminated by the impurities that might be present in the coal gas and that would quickly destroy its effectiveness as a benzol absorbent.

The Replacement of Actuated Carbon

It may be mentioned that the replacement of activated carbon should not amount to more than 20 per cent of the total supply used within a year's time under normal operating conditions. If the replacement is higher than this figure, then it is safe to assume that the gas is not being properly purified and the fault is not with the benzol absorbing installation but with the purification plant, which is not functioning properly. The probabilities are that in that state of affairs the activated charcoal is being contaminated most likely with sulphuretted hydrogen which is not being properly removed by the oxide boxes.

Evaporation and Drying of the Charcoal

Superheated steam at a temperature of 250 degrees C. approximately is employed for the removal of the benzol from the charcoal after absorption and for the drying of the same after the benzol has been removed. This superheated steam, which is generally not available in the usual gas works, can readily be made, according to the writer of this article, by building in a superheater in the bottom of the retort furnace. On the other hand, if the retort furnace is located at too great a distance from the benzol absorbing installation, so that the steam in traveling that distance through piping would lose its superheat and become ordinary saturated steam, then it is advised that the superheater be placed nearer the benzol installation and be heated with gas. This is economical for the reason that superheated steam is generally required for a period of one hour at a time and in the case of large installations only for two to three hours at the most. It is good practice to use the exhaust steam from the engine, which steam is first led through the superheater before being blown through the activated charcoal.

Rapidity of the Gas Stream

The rapidity of the gas stream passing through the activated charcoal absorber is generally chosen at such a value that the bed of carbon is not disturbed or actually moved by the passage of the coal gas. Furthermore, as far as the speed of gas travel is concerned, it is also important that the latter be so chosen that the loss in pressure through the charcoal bed is not too large. As a general rule, the speed of the gas is accordingly fixed at somewhere between 8 and 25 cubic meters per second. This is calculated on the free cross-section area of the absorber. It is self-evident that the loss in pressure must not be chosen at too high a point. The differential in the pressure varies in accordance with the speed of the stream of coal gas that traverses the mass of activated charcoal in the absorber.

Advantages of the Activated Charcoal Process

The advantages of the activated charcoal process depend mainly on the lower operating cost of the process in comparison with the washing process by means of which the benzol is removed from the gas by wash oils. The tabulation that is given below shows the consumption of various materials, such as wash oil, activated charcoal, power, steam and cooling water for the two installations. (The cost figures given in the original article are, of course, applicable to German conditions only and hence are of no interest. It is stated that the figures given do not contain interest charges and amortization charges which would make the final cost of operating the activated carbon plant still more economical than that of the wash oil plant. Trans.) It is figured that the initial cost of building and equipping an activated charcoal plant is about 20 to 25 per cent cheaper than that of the wash oil plant.

As far as the reduction in the value of the gas is concerned, this is also neglected in a comparison of the two modes of removing benzol from coal gas, as is the same in both cases. Estimating the value of the recovered benzol at the same figure in both cases, it is figured out that the true operating expense involved in working the activated charcoal plant is about 6.7 per cent of the value received for the recovered benzol, while it is approximately 21 per cent in the case of the wash oil recovery plant.

Comparative Costs

Hence the saving in the case of the activated charcoal process amounts to approximately 14 per cent. Of course, in installing a new plant for benzol recovery to take the place of an old one (a condition which may exist in certain gas works, but which does not apply to American conditions), there must be figured against the new installation the cost of scrapping the old and the initial outlay of expense for the improvements. However, it has been found that the cost of operating the improved benzol recovery plant is so much better than those of working the old wash oil plant, the consumption of materials is so much smaller and other economies can be effected therein which are not possible in the old plant, that the added cost of the new equipment is soon paid for by these savings. Another important consideration is that the activated charcoal process removes almost all of the benzol that is contained in the coal gas. The higher yield of benzol also has its effect in counteracting the initial expense of the plant.

Labor Costs

Still another important point is the lower cost of labor and the less difficulty that is experienced in operating the activated charcoal plant in comparison with the wash oil plant. It is also much easier to increase the capacity of the carbon plant than of the wash oil plant, and, furthermore, the former responds to the demands put upon it with a greater degree of elasticity than the latter. In the case of the activated charcoal plant it is only necessary to increase the depth of the bed of charcoal or to insert another absorber in the system in order to increase the capacity of the same to any desirable point. On the other hand, when increasing the capacity of the wash oil plant it is necessary to provide new apparatus, pumps and piping, all of which entails more expense, greater time spent in installation and greater trouble.

The design of activated charcoal plants has been standardized in Germany and any size of plant can be readily constructed and will be guaranteed to give the operating results that are claimed for it.

The tabulation that is given below illustrates the relative efficiencies of the activated charcoal and wash oil benzol absorption system.

Relative Efficiency

The plant is designated for the manufacture and treatment of 14,000 cubic meters of gas per day. This corresponds to a recovery of 280 kilograms of benzol at an average yield of 20 grams of benzol per cubic meter of gas, which contains on the average from 30 to 35 grams of benzol per cubic meter.

The total yearly production of the platn is approximately 100,000 kilograms of benzol.

Material.	Wash oil process Consump. per yr.	Activated charcoal process Consump. per yr.
Wash oil	22,000 kilograms	——
Activated charcoal	——	95 kilograms
Power	10,000 kwh.	3,200 kwh.
Steam	900 tons	410 tons
Water	13,000 cubic meters	4,100 cubic meters
Cost on basis of same return for benzol	21 per cent	6.7 per cent

The product that is obtained from the activated charcoal process may be said to be of better quality than that obtained from the wash oil process. This is understandable as the former benzol has not come in contact with and become contaminated with wash oil. The specific gravity of the benzol obtained by the activated charcoal process is approximately 0.885 at a temperature of 15 degrees C.

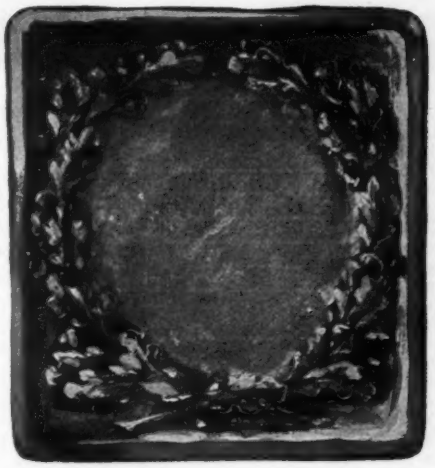
(In conclusion it may be mentioned that this article contains information that is of vital interest to those gas works that are contemplating the recovery of benzol. The question is what process to use, the wash oil or the activated charcoal process. If the above figures are reliable, and there is no reason to believe otherwise, the activated charcoal process possesses many advantages over the old wash oil process. Before making a decision these claims should be investigated and studied. The purpose in translating and publishing this article is to give the American gas industry an idea of progress that is being made along these lines.—Trans.)

THE AMERICAN GAS ASSOCIATION'S MERITORIOUS SERVICE MEDAL

Conditions under which the award is made:

1. Not more than one medal to be awarded annually for a period covered by the prior calendar year—provided a meritorious act is performed.

2. Award by and with the authority of the executive board as now constituted or any successor governing body of the American Gas Association, or its successor.



3. Only to one who has shown meritorious and conspicuous judgment, intelligence or bravery in saving human life either in the plant or works of any gas undertaking or having to do with the handling of the materials of manufacture or of the products manufactured or distributed.

4. Any loyal citizen of the United States, without regard to age, sex, race, religion or political affiliation, shall be eligible for an award, provided, however, he was at the time of the occurrence regularly in the employ of, or an officer of, a member company, or was at the time an active or an associate member of the American Gas Association or its successor.

5. An award may be made, if the executive board so order, in memory of one who, if surviving, would have received such award, provided there be a widow father, mother, son or daughter surviving, to receive custody of such award.

6. TThe executive board of the American Gas Association may at any stated meeting make any regulation or requirement governing an award not inconsistent with the foregoing requirements.

DEMONSTRATION STIMULATES SALES

(Continued from page 623)

things as proper bread and cake baking on a gas stove, and the like, the chef telling many of the little secrets that have served to make him famous.

The event was well advertised by the firm in the Atlanta newspapers and every day during the first half of the month the Mather store was virtually crowded with women who came to hear the discussion on domestic science. And the result was that several of the gas stoves were sold each day during the sampaign, sales that likely would not otherwise have been made. From the standpoint of added profits, at least, the dealer found the campaign one of the most successful of the kind he had ever held.

Current Market Prices

COALS (By Courtesy of Coal Age)

A. Bituminous.

(Spot prices, F. O. B., mines, net tons).

High Volatile, Eastern	Market	Price
Pool 54-64 (Gas Standard)	New York	$1.40 to $1.65
Pittsburgh screened gas	Pittsburgh	2.30 to 2.50
Pittsburgh gas, mine run	Pittsburgh	2.00 to 2.25
Kanawha lump	Columbus	(*)
Kanawha mine run	Columbus	(*)
West Virginia lump	Cincinnati	2.00 to 2.25
W. Virginia gas mine run	Cincinnati	1.25 to 1.50
Midwest		
Indiana 4th vein lump	Chicago	2.75 to 3.00
Indiana 4th vein mine run	Chicago	2.25 to 2.50
South and Southwest		
Big Seam lump	Birmingham	2.90 to 3.10
Big Seam mine run	Birmingham	1.75 to 2.10
Southeast Kentucky lump	Louisville	2.00 to 2.25
Southeast Kentucky mine run	Louisville	1.25 to 1.75

B. Anthracite.

(Spot prices F. O. B. mines, gross tons),

Market	Freight rates	Independent	Company
Egg New York	$2.34	$8.75 to $9.25	$8.45 to $8.85
Egg Philadelphia	2.39	8.80 to 9.60	8.80 to 8.85
Egg Chicago (net tons)	5.06	7.86 to 8.00	7.83 to 7.90

COKE (By Courtesy of Iron Trade Review).

Connellsville, furnace	$3.00 to $3.25
Wise County, furnace	3.75 to 4.50
Alabama, furnace	5.00 to 5.50
Foundry, Newark, N. J., del.	10.41
Foundry, Chicago, ovens	12.50
Foundry, Boston, delivered	12.00
Foundry, St. Louis	12.00
Foundry, Granite City, Ill.	9.00 to 9.50
Foundry, Alabama	5.50 to 6.00

PETROLEUM (By Courtesy of Oil, Paint & Drug Reporter)

(Prices at wells, per bbl.)

Pennsylvania—Ohio—West Virginia.	
Cabell, West Virginia	1.70
Corning, Ohio	1.90
Lima	2.28
Pennsylvania	3.25 to 3.75
Wooster, Ohio	2.00
Indiana—Illinois.	
Illinois	2.07
Indiana	2.08
Oklahoma—Kansas.	
Healdton	.90
Mid-continent (low gravity)	.90 to 1.05

* No quotation, due to strike.

Gulf Coast.	
Gulf Coast, Grade A	$2.00
Gulf Coast, Grade B	1.70

GAS OILS.

Gas Oil, Bayonne, bulk gal.	5¼ to 6c
Gas Oil (32-36) Illinois-Indiana,	4.93 to 5.08
Gas Oil (32-36) Oklahoma, gal.	2½ to 2¾c
Gas Oil (32-36) Gulf Coast, gal	4¾ to 5 c

PIPE AND FITTINGS—CAST IRON GAS PIPE.

(By Courtesy Iron Trade Review.)

Four-inch, Chicago	$64.20
Six-inch and over, Chicago	60.20
Four-inch, Birmingham	57.00 to 58.00
Six-inch and over, Birmingham	53.00 to 54.00
Four-inch, New York	70.60 to 71.60
Six-inch and over, New York	65.60 to 66.60
Standard fittings, Birmingham, base	115.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20.

BY-PRODUCTS

(By Courtesy of Oil, Paint and Drug

Ammonia aqua, 16 deg. drums lb.	5 to 5¼c
Ammonia aqua, 20 deg. drums lb.	6¼ to 6½c
Ammonia aqua, 26 deg. drums lb.	6½ to 7 c
Ammonia squa, anhydrous cylinder, lb.	30 to 36 c
Ammonium sulphate, bulk F. O. B. Works, per 100 lbs.	$2.60 to $2.65
Potash prussiate, yellow casks, lb.	18½ to 19 c
Potash prussiate, red casks, lb.	38 to 40 c
Soda prussiate, yellow casks,	10½c
Soda sulphocyanide, barrels, lb.	45 to 55 c

COAL TAR BASIC PRODUCTS.

(By Courtesy of Oil, Paint and Drug Reporter)

Benzol C. P. tanks, works, gal.	24 to 25c
Benzol, drums, gal.	30c
Benzol, 90% tanks, works, gal.	23c
Benzol, 90% drums, gal.	28c
Napthalene, flake, barrels, lb.	5 to 5½c
Napthalene, dyestuff bags, lb.	4½ to 5 c
Solvent Naphtha, water white works, gal.	24 to 25c
Solvent Naphtha, drums, works, gal.	29 to 30c
Toluene, C. P. tanks, works, gal.	31c
Toluene C. P. drums, works, gal.	36c

Crude Oil

Efforts, which have been made to bring about a curtailment of crude oil production, have apparently borne fruit, the report of the American Petroleum Institute for the week ended June 21 showing a decline of 9,650 barrels in the daily average for the week, which was 1,978,550 barrels. The cut in production probably reflects the threats of the purchasing companies to institute a pro-rata buying policy at the fields where production is heaviest.

Reports of the discovery of two possible new producing fields were made during the week, but neither has shown enough as yet to be seriously considered a factor.

Gas Oil

Gas oil held at 5¼c to 6c per gallon, Bayonne.

According to the Bureau of Mines, production of gas and fuel oil in California during May was 391,584,917 gallons, an increase of 23,862,353 gallons over April production. Stocks gained 23,182,008 gallons during May, totaling 789,870,564 gallons on May 31. Production of gas and fuel oil at 140 inland refineries reporting to the Western Petroleum Refiners Association for the week ended June 14 was 32,068,153 gallons, compared with 32,151,159 gallons for the previous week. Stocks on hand at the end of May were 96,325,987 gallons, compared with 97,730,482 gallons the previous week.

NEWS OF THE GAS INDUSTRY

New Officers of Public Utilities Advertising Association

The directors of the Public Utilities Advertising Association have elected the following officers for the ensuing year:

President—W. H. Hodge, Byllesby Engineering and Management Corporation, 208 S. LaSalle street, Chicago, Ill.

Vice-president—Leonard Ormerod, Bell Telephone Company of Pennsylvania, 219 N. Broad street, Philadelphia, Pa.

Secretary—Dempster Murphy, Middle West Utilities Company, 72 W. Adams street, Chicago, Ill.

Treasurer—Charles W. Person, American Gas Association, 342 Madison avenue, New York, N. Y.

Directors: To serve until 1925—B. J. Mullaney, the Peoples Gas Light & Coke Co., 122 South Michigan avenue, Chicago, Ill.; J. C. McQuiston, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.;W. P. Strandborg, Portland Railway, Light & Power Co., Portland, Ore.

To serve until 1926—Labert St. Clair, American Electric Railway Association, 8 West 40th street, New York, N. Y.; Geo. F. Oxley, National Elec. Light Association, 29 West 39th street, New York, N. Y.; Charles W. Person, American Gas Association, 342 Madison avenue, New York, N. Y.

To serve until 1927—Joe Carmichael, Iowa Committee on Public Utility Information, Des Moines, Iowa; E. J. Cooney, Lowell Gas Light Company, Lowell, Mass.; W. H. Hodge, Byllesby Engineering and Management Corporation, 208 S. LaSalle street, Chicago, Ill.

Delegates to National Advertising Commission—F. L. Blanchard, one year; J. C. McQuiston, two years; W. P. Strandborg, three years.

Community Abandons Municipal Ownership

Marcellus, a village of 1,200 in Cass county, Michigan, is to vote July 7 to dispose of its municipal electric plant in favor of greater and better supply from the system of the Michigan Gas & Electric Co. of Three Rivers.

The local plant has, during several years of its operation, accumulated a debt of $17,000, which can only be paid by spreading it over the tax roll of the entire community. In addition, the plant is no longer adequate to the needs of this thriving little town. Recently a petition signed by more than 100 leading citizens asked the City Council to authorize the steps necessary to bring about the improvement.

New Office Building for Parker-Russell Co.

The Parker-Russell Company has just about completed the building of a new office building at their plant, 3314 Morganford road. The entire city office force will be moved out to the factory, where they will all be under one roof and therefore will be better equipped than ever to serve their customers.

The new building includes private offices for the various departments and a fine light drafting room on the north side of the building, blue print room and a kitchen and dining room, where lunch will be served to the office force.

A. A. Higgins New England Representative of A. H. Wolff Gas Radiator Co.

A. A. Higgins, formerly sales manager of the Providence Gas Company, has become the New England representative of the A. H. Wolff Gas Radiator Company.

Mr. Higgins plans to make his office in Providence for the present but later will establish it in Boston.

Henry L. Masser Joins the Los Angeles Gas Co.

Mr. Henry L. Masser, for the past five years gas engineer of the California State Railroad Commission, has severed his connection with the commission and entered the service of the Los Angeles Gas and Electric Corporation as gas engineer.

During the greater part of Mr. Masser's career with the Railroad Commission he was stationed in Los Angeles, where he had the supervision of gas operations in Southern California. During the periods of gas shortage which occurred several years ago Mr. Masser represented the commission as gas administrator, in which capacity he was charged with the equitable apportionment of the available supply of natural gas among the various distributing companies.

His duties with the commission

also included the general regulation of operating standards for gas companies and the determination of gas rates.

In his new relation as gas engineer for the Los Angeles corporation he will have direct engineering supervision over all gas operations, both of production and of distribution.

The building will have a frontage of 125.8 feet on East Kingsbridge road, extending back 90 feet on the north side and 70.2 feet on the south side.

The doors and trimming on the first and mezzanine floors will be of bronze, with window sills of pink Knoxville, Tenn., marble, other marble in the building being St. Genevieve Golden Vein. John T. Woodruff & Sons, Astoria, L. I., have the general contract.

New Quarters for Pacific Coast Gas Association

By securing permanent headquarters in the Wells Fargo building, San Francisco, the Pacific Coast Gas Association has marked another step in its growth and, simultaneously, the growth of the gas industry on the Pacific Coast. The association has risen from a small beginning some thirty years ago until now, in its thirty-first year, its membership stands 843 and comprises all the different phases of the gas industry, not only the public utilities and manufacturing companies, but also the appliance men and dealers and jobbers. The increasing work of the association in late years has brought about the inauguration of a permanent working organization and the establishment of central headquarters is the first step in that direction.

Another new departure for the association is the appointment of a permanent assistant-secretary, who will be installed at headquarters and will give all his time and attention to the business of the association. This post has been given to Clifford Johnstone, a gas man from the South. He is a man well qualified for the work, having had experience in hydraulic engineering and as editor of a trade journal. He was a member of the engineering staff of the California Railroad Commission for four years, and is thoroughly trained in civil engineering. Mr. Johnstone knows the technical side of the gas business, knows a vast number of gas men throughout the industry, knows well the various gas utilities and their problems; so the association has chosen well in securing his services.

Financial Notes

The Pacific Gas & Electric Co. declares its regular quarterly dividend of $2 a share on common stock, payable June 15 to stockholders of record. In the first four months of 1924 the company earned about $350,000 over and above common stock requirements at the 8 per cent rate. At this rate the company should earn more than $1,000,000 above requirements.

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Colorado Power Co., for the 12 months ended April 30, 1924, shows 12 months gross of $1,295,220 as compared with $1,056,003. April, 1924, was $100,357 as compared with $88,995 for April, 1923. The net for 1924 was $354,972 as compared with $223,254.

New Range Company

Greenwich, Conn. — Greenwich Stove & Gas Co. is the name of a new company to be organized under the laws of Connecticut recently. The new company is capitalized at $50,000 and the incorporators are Cornelius A. Cole, Hackensack, N. J.; Robert A. Van Voorhis, Jersey City, N. J., and William E. Schiels, Jr., Clifton, N. Y.

Contract Awarded

Norwich, Conn.—The contract for laying 15,000 feet of gas pipe for the Norwich Gas Co. has been awarded to Conn. Engineering & Construction Co., at their bid of $11,502 for the work.

The Mining of Coal

Colorado during the year 1923 mined 10,336,735 tons of coal. This is an increase of 333,125 tons over 1922. There are 276 mines on a stable basis, an average of 169.9 days worked per mine, and the number of men employed was 13,277.

Pittsfield Coal Gas Co. Holds Annual Convention

The annual convention of the Pittsfield Coal Gas Co. was held at Lebanon Summit House, Lebanon, Pa., on June 20, 1924. The meeting was presided over by James J. Meehan, president of the company. A comprehensive program was prepared.

This program was as follows:

Afternoon Session, 2 p. m., President James J. Meehan Presiding

Opening business.

"The Holder Shall Not Go Down," D. M. Cullen, Jr.

"What Mary Jones Thinks the Gas Company Ought to Be," Patrick Lynch.

"Heating the House with Gas," Thomas F. Murphy.

Intermission

Reminiscences:

"Twenty Years Ago," Leroy F. Kelley.

"Stories of Former Days," John Finn.

"The Ways That Were," George R. Nixon.

"I Remember, I Remember," Ralph Volin.

"The Service Department, Its Scope and Improvement," Rudolph Kilian.

"Our Company," H. C. Crafts.

The annual banquet was held in the evening. The toastmaster was H. C. Crafts. The speakers were: William L. Adam, president Pittsfield Coal Gas Company; W. A. Whittlesey, president Pittsfield Electric Company; James J. Meehan, president Gas Company Employees' Association; Clifford E. Paige, vice-president Charles H. Tenney & Co.

Southern Association Gas Meter Lecture Course

The Southern Gas Association will conduct a short-term Gas Meter School at the North Carolina State College at Raleigh, N C., July 7 to 11, inclusive. Gas meter experts, Mr. Chas. Leech, superintendent of Macon, Ga., Gas Company, and Mr. Wagner, of U. G. I., will have charge of this school.

Program, Week July 7, 1924

Monday Afternoon — Registration at Holliday Hall, State College; 6 p. m., supper at college dining room; 7:30 p. m., talk on purpose and outline of course (speaker to be selected), Chas. Leech, Macon, Ga. Followed by smoker.

Tuesday, 9 a. m. to 12 m.—Lecture by Mr. Wagner on: Principle of Construction of Tin and Iron Meters, Principle of Action of Tin and Iron Meters, Principle of Measurement of Tin and Iron Meters.

Tuesday, 1:30 to 4 p. m.—Procedure for testing meters—classification of repairs: (a) O. K.; (b) Readjust; (c) Partial; (d) General; (e) New Diaphragm; (f) Gassing; (g) Four Pointing; (h) Adjusting; (i) Topping; (j) Painting and O. K. Stock. This will cover subject in detail.

Wednesday, 9 a. m. to 12 m.—Section A, Prover and Repair Bench Practice; section B, Meter Shop Practice, which includes: The Manufacture of Meter Diaphragms, Meter Diaphragm Lubrication. Use of Complaint Meters.

Wednesday, 1:30 to 4 p. m.—Same as the morning with sections A and B reversed.

Thursday, 9 a. m. to 12 m.—Optional: (1) Prover and Repair Bench Practice, or (2) Meter Records Paper, followed by general discussion.

Thursday, 1:30 to 4 p. m.—Optional: (1) Prover and Repair Bench Practice, or (2) Question Box—any questions submitted relative to meter shop problems. 7 p. m.—Banquet. Speaker, P. E. Brown, director of vocational training, N. C. College of State.

Friday, 9 a. m. to 12 m.—Meter Handling and Setting—paper followed by general discussion.

Friday, 1:30 to 4 p. m.—Calorimeter Demonstration. Paper, Chemistry of Gas, Prof. E. E. Randolph, Ph. D.

At conclusion questions will be distributed to those taking the course. These must be answered and returned to college to determine if man is entitled to college certificate.

Gas Franchise Granted on First Reading

Ferndale, Mich.—The session of Village Commission was very much enlivened by the petition handed in, containing 1,647 names requesting the Commission to have submitted the granting of a franchise to the Consumers Power Company to supply the village with gas, which caused considerable discussion among the Commissioners, as well as citizens present, pro and con, with emphasis on the pro, as to the advisability of submission.

The week previous Manager Peterson had submitted a questionnaire to the various lodges and societies of the village as to the advisability of submission. At this session of the Commission only five replies had been received, two favorable and three unfavorable.

The fact that the petitioners had covered at least 75 per cent of the village, and only 60 names had been registered against submission to the people for the franchise and 1,647 names in favor of same, containing the names of nearly all of our builders and representative citizens, it looked as if it was practically mandatory on the part of the Commission to grant the people's request.

The people want gas. There is no question about that, and the Consumers Power Company, a representative concern, whose assets are twice that of the Detroit City Gas Company, being able and willing to supply the same, it does not appear as if any question should arise as to giving the people a chance to vote yes or no.

Municipal Plant Discarded

Ann Arbor—Another Michigan community has discarded its municipal light and power plant in favor of service from the lines of a power company, the Michigan Public Utility Information Bureau announces.

By a vote of more than five to one, citizens of the village of Ovid granted the Consumers Power Company a 30-year franchise for light and power service. Power for the municipal water plant will be purchased from the company and the city's pumping capacity for fire protection will also be increased.

An audit of the books of the municipal plant, made by the Welfare Club of Ovid, revealed that the old plant had been operating at a loss of from $4,000 to $8,000 a year, in spite of a rate higher than that asked by the company. Preparations for the change are now being made.

New Building Erected by Lakeland Gas Company

Lakeland, Fla.—Lakeland can now boast of one of the most complete and elaborate gas office and gas fixture salesrooms to be found anywhere in Florida.

The recent completion of the two-story brick business block provides a general utility feature that may well be listed as a valuable asset.

The archives show that the Lakeland Gas Company was organized back in 1915, when purchase was made of the present office suite at the corner of Kentucky and Lemon, in the very heart of the down-town district. Under the guiding hand of President Roscoe Nettles, the business of the company has grown until today it is best expressed in this new achievement that is such a credit to Lakeland, representing as it does an investment of approximately $100,000. John Bunting is the manager of the business, having the able and experienced assistance of Miss Rose Lesesne, who is secretary and cashier.

The business office itself is a model of convenience and comfort. Tiled floors, artistically decorated walls and show windows form a background for the display of innumerable styles of gas lamps, gas heaters, gas stoves and ranges, and all kinds of things for the home, shop, office, hotel and store.

Pacific G. & E. Co. Plans Improvements

San Francisco, Cal.—Work is to be started immediately on the construction of a new compressor station at the Potrero gas plant of the Pacific Gas & Electric Company.

The work covers the erection of a steel frame, brick and concrete building. This will be the first unit of the new plant to be constructed on the twelve acres of land recently purchased adjoining the present gas works.

H. Bostwick, division manager of the company, states: "Estimates for the construction of this building involve an expenditure of $134,000. The land purchased takes in four city blocks in the vicinity of Twenty-fourth and Kentucky streets and portions of the blocks in and about Twenty-second and Michigan. When completed, this plant will be one of the largest and

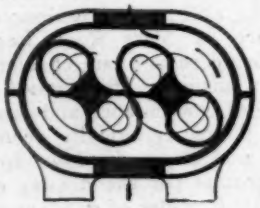
most modern gas plants in the country.

"From the plant gas will be furnished for domestic and industrial purposes to the consumers of the city and county of San Francisco and down the peninsula, where it will be possible to deliver gas through high pressure mains as far south as Los Gatos."

Work will also be started on the installation of eight concrete filter pits, involving an expenditure of $57,910.

New Bulletin on Blowers

Connersville Blower Company, Connersville, Ind., recently issued a bulletin, No. 21-A, in which is described the Victory Positive Pressure Blower. The illustration shows a cross section of the blower and the relation of the internal parts to each other; the two impellers rotating on parallel shafts do not touch each other, and are separated from the surrounding case by a very small, accurately gauged clearance. As the impellers revolve, air is drawn into the pockets between the impellers and case, carried to the outlet and ejected, giving the blower a positive suction and discharge.



The bulletin contains several illustrations of various types of blowers, together with tables of dimensions.

Gas Rates Accepted in Sandusky

Sandusky, O.—The city commission has accepted the Logan Gas Company's recent offer to extend its present contract with the city for one year from June 30, when it will expire.

The action of the commission insures to consumers until June 30, 1925, gas at 90 cents for the first 1,000 feet consumed and at from 85 cents to 75 cents for the next 4,000 feet, and 73 cents for quantities consumed in excess of 5,000 feet.

Gas Company Vindicated

Seattle, Wash.—Charges made by the city that the Seattle Lighting Company's gas service is inadequate and its rates too high virtually were abandoned at the hearing held by the State Department of Public Works on the city's complaint. No gas consumers appeared, either voluntarily or as subpoenaed witnesses, to testify against the gas company, and the city rested its case on the testimony of Superintendent of Public Utilities Clark R. Jackson and of T. C. Phipps, a consulting engineer who was employed by the utilities department last summer to make for the city an investigation of the gas company's operations.

Superintendent Jackson's testimony was merely that he believed the company might improve its service by maintaining a closer inspection of gas appliances in the homes of consumers and by a more courteous and tactful handling of complaints made by its patrons. Mr. Phipps testified regarding the report he made on his investigation which it appeared did not, generally speaking, bear out the charges the city had made.

Gas Company Budget Plans Improvements

Covina, Cal.—The year 1924 is to be a big one for the local Southern Counties Gas Company, according to Ferdinand R. Bain, president and general manager, who estimates that approximately $2,000,000 will be expended by his company for betterments and improvements to its system in Southern California. While this large sum will be scattered over the company's eight districts, the Covina-Pomona Valley territory will absorb approximately $140,000 of it during the current year.

In the Covina Valley district, one of the largest improvements will be the installation of 30,000 feet of 8-inch transmission line from Spadra to Covina, costing $54,000. This natural gas main will substantially reinforce the transmission system supplying Covina territory, including Covina, Glendora, Azusa, Baldwin Park and Puente.

The company estimates that 800 new gas consumers will be added in this district during 1924, and, placing the cost of each new consumer at $70, it is figured that approximately $50,000 will be expended in this revenue.

The pioneer natural gas utility of this part of the state, the Southern Counties Gas Company is now receiving its gas supply from every substantial gas producing field of Southern California.

Final Arguments in Atlanta Gas Case

Atlanta, Ga.—Final arguments on the petition of the Atlanta Gas Light Company for a permanent injunction to restrain enforcement of the order handed down by the Georgia Public Service Commission on December 30, 1921, reducing the Atlanta gas rate from $1.65 to $1.55 per 1,000 cubic feet have been in progress before Attorney Cam Dorsey, appointed by Judge Samuel H. Sibley to take evidence in the case.

This petition represents the final phase of the gas company's long-drawn-out legal battle to prevent the enforcement of the reduction order, and hinges about a disputed question as to the value of the gas company's property, on which, the company contends, it is entitled to a fair and legal return.

Expert witnesses introduced by the commission at the hearing before Attorney Dorsey placed the value of the property as of January 1, 1924, at about $6,500,000, in round numbers, while the gas company officials and engineers placed the property valuation at between $8,000,000 and $8,250,000, as of January 1, 1924.

Attorney Jack J. Spalding made the opening argument for the company Tuesday afternoon and Judge W. E. Watkins made the closing argument for the commission Wednesday morning, being followed by Attorney Robert G. Dodge, who made the closing argument for the company.

Hearing Ordered in Rate Schedule

Albany, N. Y.—Hearing before Public Service Commission Monday, June 23, 10:30 a. m., Commissioner Semple. Village of Peekskill vs. Peekskill Lighting & Railroad Co. Rates for gas and electricity. Order for hearing suspending proposed schedule and establishing temporary rate for gas.